DOCUMENT RESUME

ED 376 348 CE 067 649

TITLE	Operation Link-Up (Instructional Delivery through Technology). Final Report.
INSTITUTION	Tri-County Opportunities Industrialization Center, Inc., Harrisburg, PA.
SPONS AGENCY	Pennsylvania State Dept. of Education, Harrisburg. Bureau of Adult Basic and Literacy Education.
PUB DATE	30 Jun 94
CONTRACT	98-4002
NOTE	14p.
AVAILABLE FROM	AdvancE, PDE Resource Center, 333 Market Street, 11th Floor, Harrisburg, PA 17126-0333.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Adult Basic Education; *Computer Networks; *Computer Uses in Education; *Distance Education; Educational Technology; *Electronic Mail; *Program Implementation; Technical Education; *Vocational Education
IDENTIFIERS	353 Project

ABSTRACT

A project was conducted to provide access to computer-based instructional programs, student database files, and CD-ROM technology to satellite classes of the Tri-County Opportunities Industrialization Center in central Pennsylvania. During the project, computer needs at satellite locations were identified, instructional and reference materials were reviewed and evaluated, a host computer bulletin board access network was designed and installed, a user's manual was published, and staff and student training was provided. Constant refinements were made in the instructional technology during the course of the project. Success of the project was contingent on the project leaders' familiarity with computers and computer bulletin boards. The project resulted in a cost-effective way to offer alternative instructional delivery to satellite classes and equal access to information to learners at distant sites. Starting an in-house computer bulletin board service proved an inexpensive way to reach more learners and to share available resources. (KC)

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ED 376 348

Final Report

Project 98-4002

Operation Link-Up

(Instructional Delivery Through Technology)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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Operation Link-Up

(Instructional Delivery Through Technology)

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Fiscal Year
July 1, 1993 - June 30, 1994

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Grant Amount
$4,919

Contract Number
98-4002

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ABSTRACT PAGE

Title: Operation Link-Up (Instructional Delivery Through Technology)

Project No.: 98-4002 **Funding:** $4,919

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2107 North 6th Street
Harrisburg, Pennsylvania 17110

Purpose:

The purpose of this project was to provide access to computer based instructional programs, student data base files, and CD-rom technology to OIC satellite classes.

Target Audience:

The project is specific to OIC learners and staff at remote locations.

Procedures:

For this project the procedures were as follows: a) identify computer needs at satellite locations, b) review and evaluate available instructional and reference materials, c) design and install the host computer bulletin board access network, d) publish a user's manual, and e) provide for staff and student training.

Summary of Findings:

All objectives for this project were reached. Others who try to replicate this project will have to consider that the key to its success was having a project implementor who is fully aware of the capabilities and limitations of technology as it relates to distance education. Throughout the duration of this project staff was constantly bombarded with variations on the possibilities of delivering instruction through technology. In order to make the project successful at the level of funding provided, it was important that the staff focus in on the most economical way to meet the project goals. As a result the delivery methods used and the instructional materials selected may not be the most sophisticated or up-to-date, but they are nonetheless effective.

Comments:

This project only touches on the possibilities that can be achieved with distance education and technology with adult learners. Service providers who have homebound learners, remote or satellite classes, or multiple sites should be encouraged to consider a similar effort. The cost factors that used to prohibit such efforts have become less and less restrictive. This mini grant actually was completed under 80% of budgeted costs. The impact on service delivery and alternative instructional delivery for students has made the effort worthwhile.

Products: In-house user's manual

Introduction

OIC students who attended classes at our main training center had access to computerized instructional programs that were not available to those learners who attended classes at satellite locations. Some of the satellite classes did have the use of computers, but none had the array of computer programs located at the main office. Most computer applications such as those on CD-Roms, were simply to costly to provide at multiple sites.

Teachers at satellite classes were at a disadvantage by not being able to offer diversity in the delivery of academic instruction. Under this project, OIC operated a host computer at the main office from which satellite classes accessed appropriate instructional material, student information, resource material, and testing and assessment data.

The target group for this project was OIC students who wished to use computer-assisted instruction, and OIC staff who wished to access student data from a satellite location. By establishing and maintaining a host computer at the main office, OIC was be able to provide these services to several satellite locations:

- access to instructional programs
- instructional reference data
- TABE testing results
- on line student data intake processing
- student data base information
- testing registration and score reporting
- student and staff information
- homebound and distance after hours instruction

The project activities took place over a twelve-month period. Modifications to the host computer's bulletin board system were constant. A systems operator was assigned to maintain the system beyond the duration of this project.

Project staff included: George Jenner, Michael Sobkowski, and Larry Singleton each of whom served as project implementors at varies times through this project. Each brought to the project a specific skill. Mr. Jenner was familiar with computer hardware and its applications for distance education. Mr. Sobkowski, as an instructor at several satellite classes, was able to bring a non-technical perspective to the project. Mr. Singleton was himself an operator of a public bulletin board. The three in combination made the success of this project possible.

Permanent copies of this project can be found at

AdvancE
PDE Resource Center
333 Market Street - 11th Floor
Harrisburg, PA 17126-0333
717-783-9192

Western Pennsylvania Adult
Literacy Resource Center
5347 William Flynn Highway
Route 8
Gibsonia, PA 15044
412-443-7821

Statement of Problem:

Learners at satellite classes had little or no access to technology. Teachers at remote sites had no access to student information located the main OIC office. Technology and resources that were available at OIC's main location needed to be made available to more learners and instructors.

Goals and Objectives:

The overall goal of this project was to set up a BBS (Bulletin Board System) at OIC's main office that would be accessible to learners and students at remote sites. Access to the system would be by telephone modem connections.

The specific project objectives were:

- identify the computer needs of satellite instructors and link
- up no fewer than three satellite classes with the host computer
- review and evaluate available instructional and reference materials for possible installation onto the host computer
- design and install the host computer bulletin board and access network
- publish a manual of available resource and instructional materials and access guidelines for the host computer for users
- provide training for staff and students to use the host computer

Procedures:

The project consisted of five activity components which mirrored the project objectives.

Objective 1

The first activity component was designed to survey the need of satellite instructors. At the annual staff meeting, the project director gave staff an overview of the project goals. Interested staff members were asked to meet with the project implementor who, in turn, talked to the satellite instructors more specifically about the project. The project implementor tried to determine several factors before deciding which satellite classes would best be suited for remote access,

Factor 1: Capabilities of the Satellite Locations

The sites had to have access to local telephone service at no additional cost to the program. Sites located at work places and community buildings proved to be ideal. The site also had to have enough students to justify setting up remote access availability.

Factor 2: Instructional Levels of Learners

The sites we wanted to chose for this project had to have learners who functioned below the eighth grade level. OIC had in prior years completed a project that looked at available shareware software. This software is sometimes free or very inexpensive. The majority of software that we reviewed under this project was more appropriate for lower level learners. Therefore, since we planned to use as much public domain instructional material as possible to maintain the cost effectiveness of the project, we looked for sites where these learners were instructed.

Factor 3: Technical Expertise of the Instructors

For this pilot project it was important that teachers who were comfortable with using computers be selected. It was anticipated, and indeed became evident, that working the "bugs" out the remote system would take time and patience and would require the skill and input from users who were somewhat familiar with bulletin board systems, computer modems, and general computer operating systems.

Objective 1 Results

As a result of the interviews with the interested instructors, and after weighing the differences in the interested sites, the project implementor decided on the three test satellite sites. The sites were located at a government office building, a local community center, and an area hospital. In addition, several instructors participated in this project by using their home computers.

Objective 2

The project implementor used information gained from the interviews with instructional staff to decide what computer software already available at OIC would meet the needs of the students and the instructors at the selected satellite locations. The project implementor relied on the results of a previous 353 project entitled *"Using Shareware in Adult Education"* to decide what shareware software programs were rated as useful for the target audience.

The only additional instructional software purchased for this project was a CD-rom disk entitled: *"The Educational Companion."* This disk, publish by Tropical Publishing, was an inexpensive (under $25) compilation of free educational software. Some of the subject areas include:

Mathematics
Chemistry
Computer Education
Geography
Health
History
Music
Science
Spelling

It was believed that this disk as well as other on-site software would be adequate to provide computer assisted instruction at the remote sites.

Objective 2 Results

While selecting the software that would be appropriate was a relatively easy task, trying to get the software to operate within the bulletin board system was not. The project implementor struggled for months testing each software application to determine if it could be used remotely. Many of the programs, for technical reasons, or by design, could not. As a result, many of the initial selections had to be discarded in favor of second and third choices. Also the project implementor had to be aware of the license restrictions of the various computer programs before installing them on the BBS.

Providers who are interested in replicating this project should be warned that a high degree of computer knowledge is needed by the bulletin board systems operator in order to make the program work. In fact, our systems operator had computer programming experience and still found this project to be challenging.

Objective 3

After completing objective two, the project implementor began the task of designing how the host computer would operate. Choosing a computer and accessories such as a CD-rom drive, tape backup, expanded memory, and modem depend on the budget of the host provider. For this project a 486/60 pentium midtower, with a 520 meg hard drive, a 250 meg tape backup system, 8 mb of memory, and a 28,800 bps fax/modem were used. The project implementor used a commercial software package *(RoboBoard)* designed to operate remote bulletin board systems. This package was selected because of its ease of use for those who log onto the bulletin board. Colorful icons and click-on buttons allowed the users to access the various sections of the bulletin board. The package that was purchased for this project allowed for up to eight callers to log onto the bulletin board at the same time.

The implementor set up several areas on the bulletin from which learners and instructors could access information. These areas included:

Student Intake Information Area

In this area teachers could call up the host computer and register students. The same information that was required on a student intake form was required on the computer based intake form. The advantage for instructors was that less paper work was required. They could have students sit at the remote computer terminal and type in their responses to the questions. The resulting application could be printed out at the main office.

Mail Area

Messages for both students and instructors could be left on the BBS system. Students who were working at home or at a remote site could be given assignments via the mail network. Encouragement and instructional or studying suggestions could also be left for learners. Staff could receive their messages left for them at the office simply by calling into the BBS computer network. Students often call in for instructors that are out teaching at satellite locations. The message could be left on the bulletin board system for the instructor to retrieve at any time. General information regarding meetings and job opportunities for students were also left as messages on the bulletin board system.

Educational Software Area

Available instructional programs were located in this area. The programs ranged from basic life skills and remediation to more advanced GED test preparation instruction. Since some learners were using the bulletin board from a homebound location, it was important to

select programs that gave clear instructions on how to access the program and how to exit the program. Students were usually assigned specific programs to complete. However once a learner logged onto the BBS network, he/she could access any number of instructional programs different from those assigned by their instructor. All of the programs in this area were located on the hard drive of the computer

CD-rom Software Area

In addition to those programs located on the hard drive of the computer, additional instructional materials were located on a resident CD-rom. Through a separate access button on the BBS menu, learners could choose to browse through the CD-rom selections. While some of the instructional programs on the CD-rom were not appropriate for adult learners (some were too elementary in presentation and in content) the majority proved very effective in supplementing standard instructional materials.

Student Data Information Area

In this area instructors could access the student data base located at the main office. The data base contained student information such as addresses, telephone numbers, entry test scores, class codes, etc. This information was particularly useful for instructors who wanted to do follow up activities on their students. Teachers could generate student mailings and contacts from a remote location. This area was not available to learners.

GED Test Registration and Results

Teachers could, through this area, register their students for GED testing. Available test dates were displayed on the screen. Test results for learners were also posted in this area. Teachers could call up the bulletin board to determine if test results had been received.

Objective 3 Results

It was easy for the project implementor to decide what areas of interest and subjects needed to be included on the bulletin board system. However, it was very time consuming to actually design the system in a way that made the users comfortable. Even experienced computer users became frustrated at the many changes that had to be made, sometimes on a daily basis, to accommodate the users.

Objective 4

Under this objective the project implementor designed BBS user's guide. The guide provided the following information:

- an overview of the services available on the computer link-up network

how to access the services

- software available on the network by grade levels, content area, ease of use, and instructional method
- appropriate teachers guides for the various programs on the computer

Objective 4 Results

Inherent with modifying the BBS on a daily basis was the fact that the user's guide was outdated as soon as it was in the hands of the users. The final solution to this problem was to simply give an overview of services available and how those services could be assessed remotely. Lists and titles of actual software programs available gave way to examples of the types of programs that might be contained on the bulletin board.

More effective than preparing a user's manual was simply leaving mail messages for users. The messages would update the user on any changes since the last time they were on the bulletin board.

Objective 5

Under this objective, the project implementor provided staff with appropriate training on how to use the bulletin board system. Teachers were in turn asked to provide training to students. Students who used OIC's laptop computers had to come into the main office to pick up the computers and to receive instructions. Students were allowed to use the computers for 50 hours of instruction. Use was monitored. Students who had no computer usage for three consecutive days had to relinquish the use of the computer.

Objective 5 Results

Once staff became familiar with the use of the bulletin board and its contents, training became less of an issue. Students as well were able to quickly master how to negotiate around the bulletin board system. Key to obtaining this objective was finding a bulletin board system that was "user friendly."

Project Evaluations

The evaluation of this project was summative. Users had the option of leaving the bulletin board operator a message each time they used the BBS. Typical messages spoke more to ease or lack of ease of using the system more so than to the content of the instructional programs. At the conclusion of the project staff met for an informal assessment of the project. It was agreed that it should continue if possible to include more sites.

No formal evaluation tools such as surveys or questionnaires were developed as a result of this project.

Dissemination

This report and the products developed under this grant have been disseminated through AdvancE and the Western Pennsylvania Adult Literacy Resource Center.

Conclusions

The project resulted in a cost effective way to offer alternative instructional delivery to satellite classes. More importantly, it offered equal access to information to learners at distant sites. For programs who have similar delivery methods that include remote or satellite locations and have access to computer technology, starting an in-house BBS is an inexpensive way to reach more learners and to share available resources.